

**Michigan Public Service Commission
September 12, 2007**

**U-15113 10 kW and Under
Interconnection Procedures**

Comments Received on the

Staff's August 2007 Proposal

1. Staff's August 2007 Proposal	2
2. Joshua Barclay	5
3. Michigan Electric and Gas Association	12

**10 kW and Under
Faster & Less Complex Interconnection Procedures
Staff Proposal for Discussion
August 2007**

Please be reminded that the Staff report to the Commission on this workgroup is due September 30. Please review this document, and provide comments in writing to Staff by not later than midnight on September 7. **Please email comments to baldwinj2@michigan.gov.**

Our workgroup was asked to develop faster and less complex interconnection procedures for 10 kW and under interconnection projects. (This task is not limited to inverter-based projects.)

Staff is asking the workgroup to review [Wisconsin Chapter PSC 119 Rules for Interconnection Distributed Generation Facilities](#) and the [Wisconsin Distributed Generation Interconnection Guidelines](#), and [Wisconsin Application and Interconnection Agreement](#) to assess their suitability to Michigan. To highlight similarities and differences between the current Michigan rules and the Wisconsin rules, Staff prepared a comparison document. This comparison document is provided in MS Word format to make it easier for the workgroup to provide comments within the document, if desired.

Staff proposes these additions to the Wisconsin Rules:

1. Provide for a pre-application meeting between utility and project developer.
2. Include a provision for the Commission to appoint expert(s) to provide technical expertise related to interconnection issues.

This function would be similar to the provision in the Animal Contact Current Mitigation Rules or PA 30 Electric Transmission Line Certification Act. Excerpts from these MPSC Administrative Rules appear on the next page. In particular, this expert would provide assistance to the Commission, in the event there are any cost-related or technical issue complaints.

3. Require distribution utilities to consult with transmission owners for all generator projects >2 MW and when total generation on a distribution line will exceed 10 MW.

In comments, please address the following questions:

1. Will these Wisconsin rules provide faster and less complex interconnection procedures for Michigan interconnections for small inverter based systems?
2. Do you support the idea of using these rules as the basis for new Michigan rules? If not, please explain why and provide any alternative recommendations.
3. What modifications (if any) to these Wisconsin rules do you recommend? Do you agree with the proposed modifications Staff has listed?

4. Is it acceptable for Michigan rules to adopt the Wisconsin generator size categories, in particular the “20 kW and less” category?

Animal Contact Current Mitigation Rules

R 460.2704 Request for investigation.

Rule 4. (1) After completion of the procedures in R 460.2702 and R460.2703, a complainant or the utility may request, with notification to the other party, that the commission appoint at least 3 and up to 5 experts to investigate in the manner in R 460.2705. If the commission appoints at least 3 and up to 5 experts, those experts shall have the rights and responsibilities as described in that rule and shall issue their investigation report and conclusions to the commission, the complainant, and the utility.

(2) The funding mechanisms in R 460.2705 shall be used to defray the costs of the experts as determined by the commission.

History: 2007 MR 3, Eff. Feb. 6, 2007.

R 460.2705 Appointment of experts.

Rule 5. (1) If a complainant or the utility requests an investigation through the commission under R 460.2704 of these rules, then the commission may appoint at least 3 and up to 5 experts to investigate the complaint and report findings to the commission within the scope of these rules. The commission shall consider expert individuals based on, but not limited to, all of the following criteria:

- (a) Expertise specific to the specie affected.
- (b) Objectivity - individuals not directly impacted by the resolution.
- (c) Neutral third-party.
- (d) Training and expertise in primary distribution systems and certification in secondary wiring systems.

(2) The experts shall limit their conclusions and reports to the subject of the dispute and the facts and circumstances of the specific case for which they were appointed.

(3) Either party may request specific disciplines be represented on the expert team.

(4) The experts shall submit a report to the commission with the results and conclusions of their inquiry, which may suggest corrective measures for resolving the complaint. The reports of the experts shall be received in evidence and the experts shall be made available for cross-examination by the parties at any hearing. The experts shall report to the commission within 30 days of their employ. The commission may grant up to a 30-day extension.

(5) The reasonable expenses of experts, including a reasonable hourly fee or fee determined by the commission, shall be submitted to the commission for approval and, if approved, shall be funded under subrule (6) of this rule.

(6) The utility shall reimburse the experts appointed by the commission for the reasonable expenses incurred in the course of investigating the complaint.

History: 2007 MR 3, Eff. Feb. 6, 2007.

PA 30 Electric Transmission Line Certification Act

460.568 (3) The commission may assess certificate application fees from the electric utility, affiliated transmission company, or independent transmission company to cover the commission's administrative costs in processing the application and may require the electric utility, affiliated transmission company, or independent transmission company to hire consultants chosen by the commission to assist the commission in evaluating those issues the application raises.

Comparison of 10 kW and Under Interconnection Procedures for Inverter Based Generator Projects			
Phase	Current Michigan Procedures (from under 30 kW set) *Xcel and I&M are not subject to these procedures. Staff recommendations found reasonable by the Commission in U-15113 Order dated 2/27/07	Wisconsin Procedures (Category 1: 20 kW or less)	Comments/Proposed Changes
	Utility is required to appoint a single point of contact for interconnection matters.	Utility is required to appoint a single point of contact for interconnection matters. Each utility shall have current information concerning its point of contact on file with Commission. PSC 119.03	
	Utility must appoint a knowledgeable utility interconnection project manager.		
Application	Standard Statewide Application	Standard Statewide Application PSC 119.02(34)	
	Interconnection & Operating Agreement is not standardized across utilities.	Interconnection & Operating Agreement is standardized across utilities. PSC 119.02(35)	<i>Standardization reduces confusion and delays.</i>
	Application Fee \$100	No Application Review Fee Table 119.08-1	<i>This Wisconsin policy minimizes obstacles to application.</i>
	1 page application with the following attachments: inverter-type generator application data sheet (2-pages and the following attachments: site plan, simple one-line diagram, detailed one-line diagram, written commissioning test procedure, NRTL certification)	3 page application form with the following attachments: one-line diagram, site plan, certificate of insurance, copy of proof of equipment certification. One-line schematic diagram, PSC 119.10 Site plan, PSC 119.12 Proof of certification, PSC 119.26 Insurance, PSC 119.05. See also Application Form and Interconnection Agreement.	<i>The simplest form possible should be required. Our 2006 application with DTE, for interconnection of our 3.2 kW array, was so complex, that no one on our team (which included a solar contractor, an AP physics teacher, a medical doctor, and a graduate of UM engineering school) could figure out how to complete it. After weeks of frustration, we finally ended up copying nearly word for word the Ypsi Food co-op's application from a year prior, substituting our specs. Without the co-op's helps (and use of their application) we would have been lost.</i>

Comparison of 10 kW and Under Interconnection Procedures for Inverter Based Generator Projects			
Phase	Current Michigan Procedures (from under 30 kW set) *Xcel and I&M are not subject to these procedures. Staff recommendations found reasonable by the Commission in U-15113 Order dated 2/27/07	Wisconsin Procedures (Category 1: 20 kW or less)	Comments/Proposed Changes
	Utility acknowledges receipt of application within 3 business days. This acknowledgement should be in writing.		
	No time limit for utility completeness review. Utilities shall evaluate the application for completeness and notify the applicant in writing within 10 business days of receipt regarding the following: 1. Whether application is complete; and if not, advise what materials are missing. 2. Any changes in rates the utility believes will be required or optional (such as standby rates). 3. All remaining activities the applicant must conclude, for the application to be complete.	Utility shall notify applicant within 10 working days of receipt whether application is complete. PSC 119.04(3)	<i>The faster and the more specific the information provided to the applicant, the faster the process can proceed. I believe Michigan's current rules are superior in this case.</i>

Comparison of 10 kW and Under Interconnection Procedures for Inverter Based Generator Projects			
Phase	Current Michigan Procedures (from under 30 kW set) Staff recommendations found reasonable by the Commission in U-15113 Order dated 2/27/07	Wisconsin Procedures (Category 1: 20 kW or less)	Comments/Proposed Changes
Utility Review	Utility must complete its obligations within 2 weeks after the application is complete. Delays that are the responsibility of the project developer do not count toward the 2 week timeline.	Utility has 10 working days after application is deemed complete to finish its application review. The application review will determine if an engineering review is necessary. PSC 119.04(4)	<i>Faster timelines save the citizens of Michigan time, money and energy.</i>
	All generators under 30 kW are processed under these procedures.	All generators 20 kW or less are processed under these procedures. PSC 119.02(4)	<i>Encouraging Michigan businesses and residents to provide their energy renewably helps Michigan's economy and environment for years to come. The higher 30 kW limit will allow proportionally more renewable power production in this category of producers. I don't see how reducing the limit to 20 kW would help the citizens of Michigan, or how it would improve the environment economically or ecologically. I guess I'm not clear on why the change to 20 kW is being suggested.</i>
	Interconnection Study Agreement Fee is the lesser of 5% of total project cost or \$10,000. No charge if aggregate export capacity is less than 15% of the line section peak load and does not contribute more than 25% of the maximum short circuit current at the point of interconnection.	No Engineering Review or Distribution System Study Fees Table 119-08-1	<i>Again, Wisconsin has fewer obstacles to getting distributed energy on the grid.</i>
	Interconnection Study Timing – completed within the 2 weeks of the date the utility determined the application was complete.	Engineering Review must be completed within 10 working days. PSC 119.04(5a)	<i>Wisconsin rules again provide faster timelines.</i>

	Distribution System Study Timing – completed within the 2 weeks of the date the utility determined the application was complete.	Distribution System Study Timing – must be completed within 10 working days. PSC 119.04 (7a) Applicant must pay for any distribution modification or upgrade costs. PSC 119.04(9)	
--	--	--	--

Comparison of 10 kW and Under Interconnection Procedures for Inverter Based Generator Projects			
Phase	Current Michigan Procedures (from under 30 kW set) Staff recommendations found reasonable by the Commission in U-15113 Order dated 2/27/07	Wisconsin Procedures (Category 1: 20 kW or less)	Comments/Proposed Changes
Inspection, Testing & Operation	Insurance is required in the Interconnection & Operating Agreement. Staff does not have copies of these documents.	Applicant must provide a Certificate of Insurance with the application. PSC 119.05 Category 1 must have \$300,000 in liability insurance. Table 119.05-1	<i>My homeowners insurance, which also covers my PV array, meets this liability amount requirement. There is no indication in table 119.05 nor the related text to the contrary, so my assumption is that my PV array does not need it's "own" separate liability policy.</i>
	The customer must provide 5 business days written advance notice of when the project will be ready for inspection, testing, and approval. The utility reserves the right to inspect the project.	The utility may perform an anti-islanding test only. PSC 119.04(10.a.2) Applicant shall notify the utility in writing that the DG installation is complete and that it is available for testing at least 15 working days before applicant interconnects to distribution system. Utility may witness the applicant's test or perform their own test. PSC 119.04 (10.a.3)	<i>The five day requirement currently in place in Michigan will reduce the time to interconnect.</i>

	<p>Utility may charge customer for upgraded meter.</p>	<p>Meters may spin backwards in the Wisconsin net metering program. The typical customer meter is usually satisfactory. MPSC Staff is uncertain about charges for meters for those circumstances where a new meter is required.</p>	<p><i>Especially here the Wisconsin rules remove obstacles to placing non-polluting, locally harvested energy on the grid. My "typical" meter was working perfectly fine, until DTE forced me to replace it.</i></p> <p><i>This particular Wisconsin actual <u>net</u> metering policy truly encourages renewable energy generation. In contrast, the so-called "net metering" (but actually energy-portion-only) rule sought by Michigan utilities would greatly discourage grid-tied renewables by devaluing every kWh sent to the grid by nearly half.</i></p> <p><i>Grid-tied Solar systems provide peak energy production when the utilities need it most-when they currently have to buy energy from out of state--why would Michigan want to discourage its citizens from paying their own private money to make our grid more robust, more efficient, more environmentally sound and more impervious to terrorism? I wish that the Michigan utilities would stop giving lip service to "green currents," and instead be truly supportive of renewable energy by adopting this Wisconsin policy.</i></p>
	<p>Utility may charge for site inspection and test observation.</p>	<p>Utility may not charge customer for site inspection and test observation. PSC 119.04(10.a.2)</p>	<p><i>In all of these last points, Wisconsin removes even more disincentives to clean energy production. If Michigan wants to be ready for the economy of the 21st century, we need to lead, not lag behind our neighboring states.</i></p>
	<p>External disconnect switch may be required.</p>	<p>External disconnect switch may be required. PSC 119.20(3)</p>	

	Inverters must operate at a unity power factor.	Must be operated at a power factor greater than 0.9. PSC 119.20(7a)	<p><i>Allowing power factors in a reasonable range of values again allows more clean energy on the grid.</i></p> <p><i>In summary, I believe the Wisconsin procedures would generally create a faster and less complex inter-connection process.</i></p> <p><i>Any of Michigan's current procedures which are simpler or more encouraging of distributed, clean energy production, should be retained.</i></p> <p><i>The Staff Proposals for addition to the Wisconsin Rules seem generally agreeable to me, but I'm not clear if "Provide for a pre-application meeting between utility and project developer" means that such a meeting is required, or if it means that it will be available by request of the customer.</i></p> <p><i>Respectfully Submitted,</i></p> <p><i>Joshua Barclay</i> <i>4445 Valentine Rd</i> <i>Whitmore Lake, MI 48189</i> <i>JoshuaBarclay@earthlink.net</i></p>
--	---	--	---

Memorandum

To: Julie Baldwin, MPSC Staff

From: James A. Ault, Michigan Electric & Gas Association (on behalf of indicated electric utilities)

Date: September 7, 2007

Re: Joint Comments on Staff Proposal for Discussion – Interconnection Procedures

I. Introduction

These joint comments are provided on behalf of the following electric utilities: Consumers Energy Company, The Detroit Edison Company, Alpena Power Company, Edison Sault Electric Company, Indiana Michigan Power Company, Upper Peninsula Power Company, We Energies, Wisconsin Public Service Corporation, Xcel Energy, and members of the Michigan Electric Cooperative Association. These comments address (i) Interconnection Procedures – 10kW and Under and (ii) Interconnection Procedures – 30kW and Larger, as identified in the Staff Proposals for Discussion of August, 2007. Unless otherwise stated, the comments below reflect the consensus views of the participating utilities. The specific questions posed in the Staff documents are repeated here to establish the framework for the joint comments.

II. Procedures – Projects \leq 10 kW

Staff Q1: Will these Wisconsin rules provide faster and less complex interconnection procedures for Michigan interconnections for small inverter-based systems?

Response: Subject to more specific comments on the rules, set forth below, the answer to this question is that the WI rules will provide less complex procedures. The step-by-step approach used in WI would be helpful.

Staff Q2: Do you support the idea of using these rules as the basis for new Michigan rules? If not, please explain why and provide any alternative recommendations.

Response: Generally, “yes.” There are a number of potential issues, including the need to consider whether the formal rules should incorporate matters now addressed in the interconnection procedures of each utility and other Michigan-specific issues and circumstances. A major improvement would be to adopt the Wisconsin interconnection application process and timeline, which uses separate and distinct “steps” instead of a single, overall deadline. Some utilities would not support complete adoption of the WI technical guidelines to replace the MI procedures, however. Once new rules are developed, the utilities could submit conforming

requirements which address some of the detail needed beyond the formal rules, as occurred previously.

Staff Q3: What modifications (if any) to these Wisconsin rules do you recommend? Do you agree with the proposed modifications Staff has listed?

Response: (A) Recommended modifications include:

(i) Project Manager: this should be just one person, designated as the "point of contact". For the small projects, there is likely no need for a utility project manager provided an appropriate contact is identified.

(ii) Application Fee: removal of the \$100 application fee would cause more subsidization of the project developers. The fee should continue.

(iii) Standard Application: MI is now using a 1-page form versus the 3-page WI form; the longer form may be more complex than necessary.

(iv) Standard Forms: Some utilities expressed a preference to continue using the MI forms for interconnection application and agreement with any necessary modifications. Also, several expressed preference for the MI generation data forms over the WI versions.

(v) Equipment Certification: UL 1741 certification changes over time because the standard is updated. The essential point here is that the certification incorporates the anti-islanding standard (2 seconds or less) of IEEE 1547. Certification via "UL 1741 in compliance with IEEE 1547" or similar language will address this concern. Older equipment brought into a project, certified under an earlier version of UL 1741, should meet the newer standard with anti-islanding requirements.

WI Rule 119.20(6)(b) should be replaced regarding the smaller projects (under 30 kW) to allow certification of the interconnection relaying system by a nationally recognized laboratory to meet IEEE 1547. Data submitted must include manufacturer's information indicating such certification and equipment should be placarded to allow field verification.

The list of approved relays and equipment should continue to be part of the MI requirements.

(vi) Insurance and Indemnity: Including an insurance certificate with the application form (WI rule) is preferred. Although the WI insurance provision and coverage levels are acceptable to some, we do not have agreement on the indemnity language in the WI rules and alternatives should be considered.

(vii) Time Deadlines: The rules should be very clear that the “clock starts” only after the application is accepted as complete by the utility. Further, the WI approach with sequential timelines and activities is more workable than the MI approach with a single timeline for completed interconnection.

(B) Comments on the three additions to the WI rules proposed by Staff are as follows:

(i) Pre-Application Meeting: For these small projects, the term “meeting” should include telephone conferences. A formal meeting will not be necessary for many projects (e.g. plug and play) and the scope of meeting/conference should be as needed for the project.

(ii) Expert Panel: This recommendation should not be adopted because it could lead to added expense and unnecessary demands by persons who will bear none of the investigation expense. An informal industry working group could be developed to provide technical information, on a voluntary basis.

(iii) Transmission Owner Consultation: This proposed addition is generally not applicable to small projects ($\leq 10\text{kW}$) feeding the local distribution network.

Staff Q4: Is it acceptable for Michigan rules to adopt the Wisconsin generator size categories, in particular the “20 kW and less” category?

Response: The electric utilities are not in full agreement on this issue. The largest utilities, Detroit Edison and Consumers Energy, support continuation of the existing size categories (e.g. smallest is $\leq 30\text{ kW}$). Utilities serving in both WI and MI (WE, WPS, Xcel) would favor consistency among the two jurisdictions, thus the WI categories. This consistency approach would include affiliated companies such as UPPCo and ESE in the Upper Peninsula. If changes are to be made in the categories, utilities request the opportunity to propose alternatives.

III. Procedures – Projects $\geq 30\text{kW}$

Staff Q1: Will these Wisconsin rules, with the proposed Michigan additions, satisfactorily resolve any of the issues the Commission has asked our workgroup to address? Which ones?

Response: Yes, as to Commission issues #1, 4, and 6 identified in the Staff proposal, subject to additional comments on the following items:

(i) Power Factor: PSCW Rule 119.20(7) uses 0.9 power factor for projects up to 200 kW, and then “unity” or “as agreed” above that. If the MI categories are used, a demarcation would be appropriate at 150 kW and above. Projects in the 150-200 kW range would use a range of no less

than .95 leading through .95 lagging with unity/agreement above that range..

(ii) Rule Revision: In MI there are very general formal rules, covering basic matters including timelines. Technical matters and details are left to the less formal interconnection procedures. If the “WI model” is adopted, we need to consider how to integrate with the formal rules and informal procedures in MI. It would be possible to preserve the MI structure while revising the rules and procedures.

(iii) Pre-Application Meeting: See earlier comment. A formal meeting should be optional depending on circumstances. Telephone consultation is a preferred method, with the formal meeting only if necessary. For the larger projects, there could be a provision for requesting a formal meeting.

(iv) Expert Panel: See earlier comment. Use of independent experts should be handled based on the unique circumstances of a particular contested matter, rather than being a more automatic procedure.

(v) Transmission Owner Consultation: See earlier comment. For the larger projects (>2 MW), the term “consult” may raise concerns because the utility is not proposing the project. The distribution utility would notify the transmission owner for any project that may impact the transmission system. However, the scope of any transmission study and the time needed are matters for the transmission owner and project developer to address.

Staff Q2: Do you support the idea of using the Wisconsin rules as the basis for new Michigan rules? If not, why not? And, if not, do you have an alternative recommendation for consideration?

Response: Generally, subject to addressing Michigan-specific issues and circumstances, utilities have supported the Wisconsin interconnection application approach as previously noted. Alternative recommendations are discussed above. Some utilities would not support complete adoption of the WI technical guidelines to replace the MI procedures, however, as also discussed above. For the projects in this size category, utilities should have the right to approve protective relays and equipment.

Staff Q3: What topics should be covered at the proposed pre-application meeting between a utility and a project developer or customer?

Response: This meeting should address the project overview and background facts, covering basic matters such as location, project description, area facilities, ability to accommodate, contact information and the interconnection requirements. As noted previously, a formal meeting should not be mandatory in all cases.